

AMENDMENTS TO THE CLAIMS

AMENDED CLAIM SET:

1. (currently amended) A method for manufacturing a solid ammonium phosphate and/or urea ammonium phosphate product from a ~~solution containing urea and phosphoric acid, characterized in that~~ the mother liquor of a urea phosphate process or from the scrubber solution of an NPK process, said method comprising the steps of:

a) recovering the mother liquor or the scrubber solution containing or provided with phosphoric acid, to form an aqueous solution containing urea and phosphoric acid;

b) heating and mixing the aqueous solution to remove water by evaporation, the solution containing urea and phosphoric acid is heated by mixing in order to evaporate water and to decompose the unreacted urea into carbon dioxide and ammonia, evaporate the carbon dioxide, and react the ammonia, alone or together with unreacted urea, with the phosphoric acid into an aqueous suspension of ammonium phosphate and/or urea ammonium phosphate, and

c) processing the aqueous suspension further ~~;~~ ~~b) the formed carbon dioxide is removed;~~ ~~c) the formed ammonia is used to neutralize the phosphoric acid in the solution, and d) the formed ammonium phosphate and/or urea ammonium phosphate suspension is further processed to form a solid ammonium phosphate and/or urea ammonium phosphate product.~~

2. (currently amended) A method according to Claim 1, wherein ~~characterized in that in the solution containing urea and phosphoric acid,~~ the molar ratio ~~ratio~~ of the nitrogen of the urea and the phosphorus ~~phosphor~~ of the phosphoric acid (N/P) in the solution containing urea and phosphoric acid is > 0.85 .

3. (currently amended) A method according to Claim 1 or 2, wherein ~~characterized in that~~ the solution containing urea and phosphoric acid is the mother liquor ~~liquid~~ of a urea phosphate process.

4. (currently amended) A method according to Claim 1, ~~characterized in that solid matter, such as carbonate, sulphate, and oxide of alkali metals or alkaline earth metals and/or chloride,~~ wherein an alkali metal or alkaline earth metal carbonate, sulphate, oxide, or chloride, in solid form, is added to the reaction mixture to partly neutralize the solution, to bind water, and/or to add nutrients to the end product.

5. (currently amended) A method according to Claim 1 or 2, wherein ~~, characterized in that~~ the solution containing urea and phosphoric acid is the scrubber solution of a urea-based NPK process, which contains or to which has been added phosphoric acid.

6. (currently amended) A method according to Claim 1, wherein characterized in that the solution containing urea and phosphoric acid is heated at 50-125 °C.

7. (currently amended) A method according to Claim 6, wherein ~~characterized in that~~ said solution is heated until the moisture of the formed suspension is 15-20%.

8. (currently amended) A method according to Claim 6 or 7, wherein ~~characterized in that~~ said solution is heated until the pH of the suspension is 2.5-7.

9. (currently amended) A method according to Claim 6, wherein ~~characterized in that~~ the solution is heated until the molar ratio of the nitrogen of the ammonia and the phosphorus phosphor of the phosphate (N/P) in the suspension is about 0.1-1.5 : 1.

10. (currently amended) A method according to Claim 1, ~~characterized in preferably being continuous and diphasic: in the~~ wherein, in a first phase, water is evaporated in one or more reactors at about 100 °C, until the moisture of the formed suspension is < 20% and the pH is 3-5 and, in a second phase, evaporation is continued in one or more reactors at about 110-

115 °C, until the moisture of the suspension is < 10% and its pH is about 6-6.5.

11. (currently amended) A method according to Claim 1, wherein ~~characterized in that~~ the product suspension containing ammonium phosphate and/or urea ammonium phosphate is solidified in the form of a layer of 1-30 mm, ~~preferably 10 mm~~ in thickness, spread on a sheet-iron belt conveyor, which can be heated and/or cooled, and which is heated and/or cooled for 0.01-2 hours, ~~preferably at a retention time of 0.05-0.5 hours~~ to a final temperature of < 50 °C.

12. (currently amended) A method according to Claim 1, wherein ~~characterized in that~~ the solidified end product is dried, crushed, ground, and/or granulated.

13. (cancelled).

14. (cancelled).

15. (currently amended) A method according to Claim 6, wherein ~~3, characterized in that~~ the solution containing urea and phosphoric acid is heated at 100-115 °C.

16. (currently amended) A method according to Claim 3, wherein ~~characterized in that~~ the solution containing urea and phosphoric acid is heated until the moisture of the formed suspension is < 10%.

17. (currently amended) A method according to Claim 3, wherein ~~characterized in that~~ the solution is heated until the pH of the suspension is 4-6.5.

18. (currently amended) A method according to Claim 3, wherein ~~characterized in that~~ said solution containing urea and phosphoric acid is heated until the molar ratio of the ammonia nitrogen and the phosphate phosphorus ~~phosphor~~ (N/P) in the suspension is about 0.85-1.5:1, ~~preferably 1.3-1.4:1.~~

19. (cancelled).

20. (new) A method according to Claim 3, wherein, in the urea phosphate process, the preparation of urea phosphate has been carried out by reacting, in an aqueous reaction medium, urea and phosphoric acid into urea phosphate, separating the urea phosphate from the aqueous reaction medium by crystallization, and leaving an aqueous mother liquor containing unreacted urea and unreacted phosphoric acid.

21. (new) A method according to Claim 11, wherein said product suspension containing is solidified in the form of a layer of 10 mm in thickness spread on a sheet-iron belt conveyor which is heated and/or cooled for 0.05-0.5 hours.

22. (new) A method according to Claim 18, wherein said solution containing urea and phosphoric acid is heated until the molar ratio of the ammonia nitrogen and the phosphate phosphorus (N/P) in the suspension is 1.3-1.4:1.